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CATALOGUE

L I B R A R Y

OF THE

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U.S. Department of Agriculture

PLANTS, BULBS, TUBERS, ETC.,

FOR DISTRIBUTION FROM THE

U. S. PROPAGATING GARDEN,

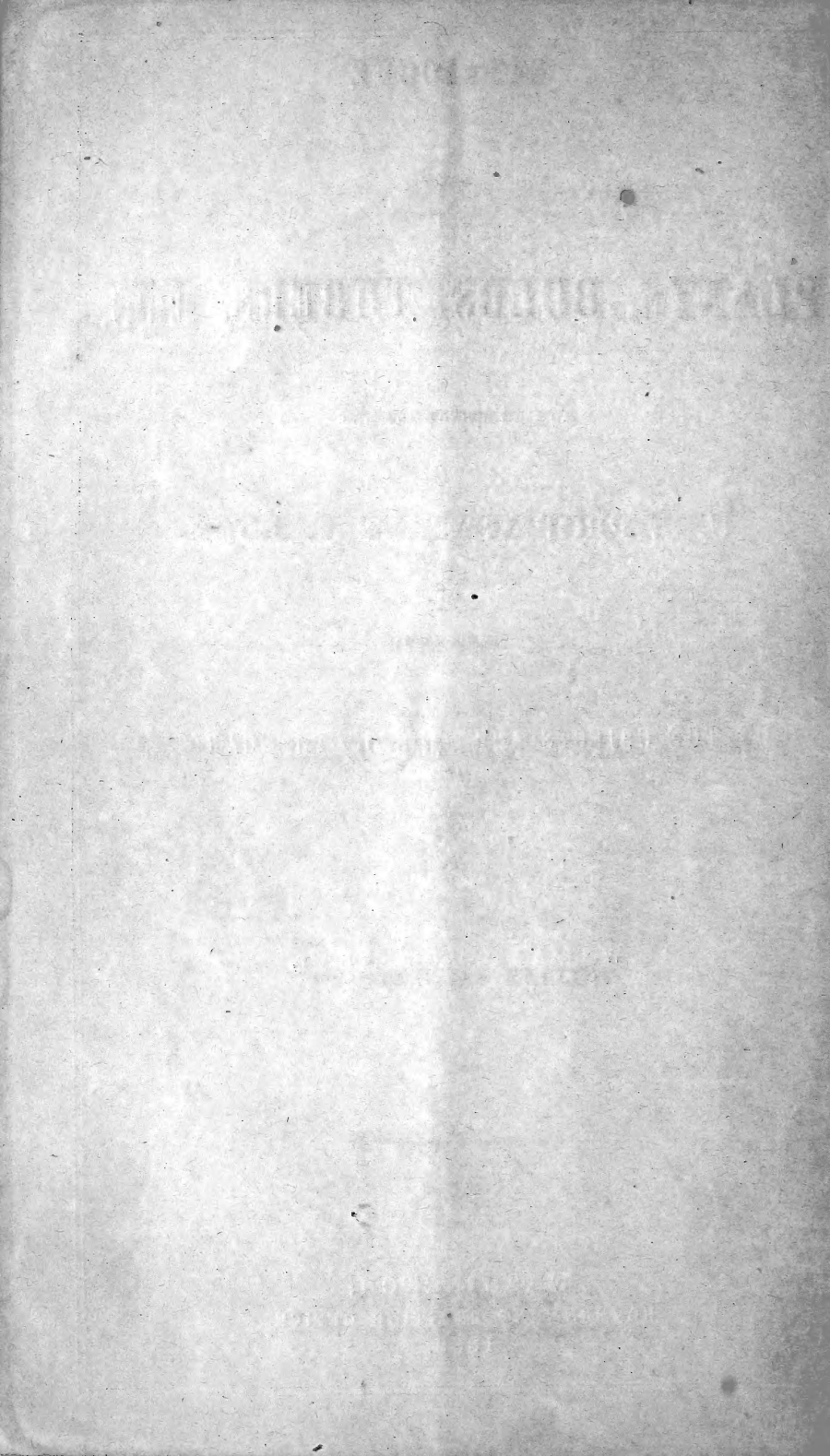
WITH A REPORT

ON THE OBJECTS AND AIMS OF THE GARDEN,

BY

WILLIAM SAUNDERS, Sup't.

WASHINGTON:
GOVERNMENT PRINTING OFFICE.
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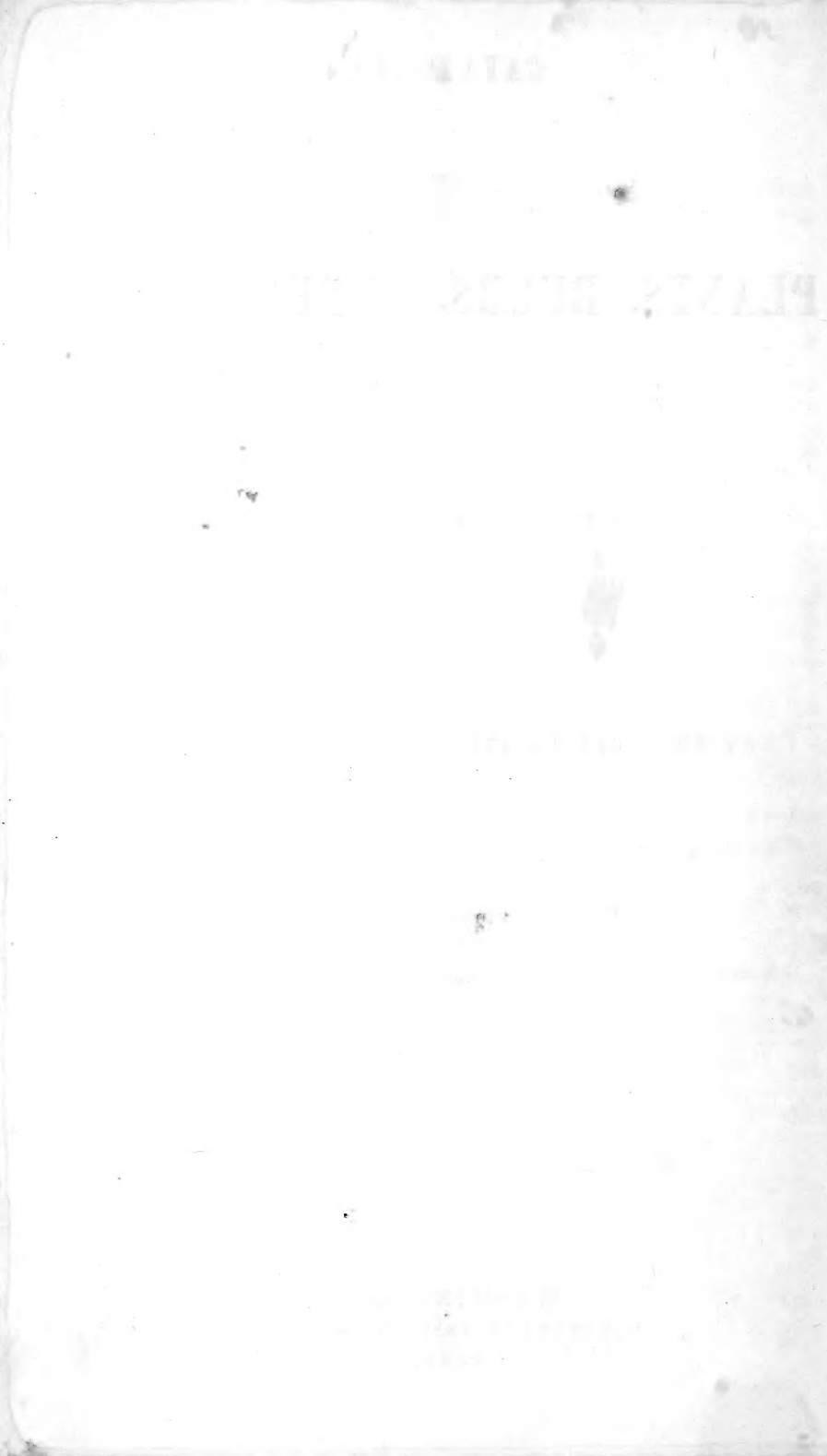
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DEPARTMENT OF AGRICULTURE,
Washington, October 10, 1862.

SIR : You will please furnish to this department, at your earliest convenience, a list of the plants that are ready for distribution, together with any suggestions that may occur to you tending to increase the efficiency of the garden under your care.

I. NEWTON,
Commissioner.

Mr. WM. SAUNDERS,
Superintendent of Experimental Gardens.

UNITED STATES EXPERIMENTAL GARDENS,
Washington, October 17, 1862.

SIR : In compliance with your request, I herewith enclose a list of such plants as I find available for distribution. From circumstances over which I had no control, and not necessary here to state, no reliable list of some of the articles can be given; the whole number of each species is however noted.

I also beg to add a few suggestions relative to the future efficiency of the garden.

Very respectfully, your obedient servant,

WILLIAM SAUNDERS.

I. NEWTON, Esq.

LIST OF PLANTS, BULBS, AND TUBERS FOR DISTRIBUTION FROM THE UNITED STATES EXPERIMENTAL GARDENS DURING THE FALL AND SPRING OF 1862 AND 1863.

NAMES.	QUANTITIES.
Native grape vines, 100 varieties.....	10,000
Foreign grape vines, 80 varieties.....	2,000
<i>Gladiolus</i> , 35 varieties.....	2,000
Japan cedar, (<i>Cryptomeria japonica</i>).....	350
Caper plant, (<i>Capparis spinosa</i>).....	250
Japan arborvitæ, (<i>Biota japonica</i>).....	600
Chinese arborvitæ, (<i>Biota chinensis</i>).....	800
Candleberry myrtle, (<i>Myrica cerifera</i>).....	1,500
Carob plant, (<i>Ceratonia siliqua</i>).....	250
Spanish chestnut, (<i>Castanea vesca</i>).....	150
Christ's thorn, (<i>Paliurus aculeatus</i>).....	90
Ginger plant, (<i>Zingiber officinale</i>).....	40
Date palm, (<i>Phoenix dactylifera</i>).....	100
Hop tree, (<i>Ptelea trifoliata</i>).....	50
Indian shot, (<i>Canna</i>), 8 varieties.....	800
Laburnum, (<i>Cytisus alpinus</i>).....	150
Live-oak, (<i>Quercus virens</i>).....	300
Spanish oak, (<i>Quercus gramuntia</i>).....	60
Oleaster, (<i>Elæagnus angustifolia</i>).....	240
Pistachio nut, (<i>Pistachio vera</i>).....	150
Senna, (<i>Cassia</i>), species.....	100
Mist bush, (<i>Rhus cotinus</i>).....	100
Silk tree, (<i>Acacia julibrissin</i>).....	200
Tea plant, (<i>Thea</i>), species.....	1,600
Varnish tree, (<i>Rhus vernicifera</i>).....	350
Max tree, (<i>Rhus succedaneum</i>).....	120
Chinese yam, (<i>Dioscorea batatas</i>).....	200
Syrian potato, (<i>Caladium esculentum</i>).....	350
Prickly pear, (<i>Cactus opuntia</i>).....	100
Ivy, (<i>Hedera helix</i>).....	600
Oleander, (<i>Nerium oleander</i>).....	60
Cork oak, (<i>Quercus suber</i>).....	20,000
Ginkgo tree, (<i>Salisburia adiantifolia</i>).....	80
(<i>Serissa foetida</i>).....	200
Yellow wood, (<i>Virgileia lutea</i>).....	30
(<i>Yucca aloifolia</i>).....	180
Roses, 80 varieties.....	8,000
Osier—basket willow—roots.....	2,000
basket willow—cuttings.....	20,000
Japan raspberry.....	1,000
Syrian hedge plant, (<i>Acacia</i>), species.....	250
Camphor plant, (<i>Laurus camphora</i>).....	120
Myrtle, (<i>Myrtus communis</i>).....	120
(<i>Bryophyllum calycinum</i>).....	100

OBJECTS AND AIMS OF THE EXPERIMENTAL GARDEN.

In offering the following suggestions it is to be understood that only a few of the primary and most prominent objects of the garden are brought under consideration. No definite limits can be given as to the extent, neither can any restrictive rules control all the details of such operations; these are as various and boundless as are the objects to which they are directed :

1. To procure and encourage the transmission of seeds, cuttings, bulbs, and plants from all sources, both foreign and domestic, for the purpose of testing their merits and adaptation in general, or for particular localities of this country.
2. To procure, by hybridizing and special culture, products of a superior character to any now existing.
3. To ascertain, by experiment, the influences of varied culture on products, and the modifications effected by the operations of pruning and other manipulations on trees and fruits.
4. To investigate more thoroughly the various maladies and diseases of plants, and the insects that destroy them.
5. To provide ample means for thoroughly testing samples of all seeds and other contributions that may be received.
6. To cultivate specimens of the various hedge plants and exhibit their availability for that purpose.
7. To cultivate a collection of the best fruit trees and plants, such as grapes, apples, pears, peaches, strawberries, raspberries, currants, &c., so as to compare their respective merits.
8. To plant a collection of choice shrubs, adapted for decorating gardens and landscape scenery.
9. To erect glass structures for the twofold purpose of affording the necessary facilities for cultivating exotic fruits and plants, and to furnish examples of the best and most economical modes of constructing, heating, and managing such buildings.

These propositions comprise some of the most obvious objects claiming immediate attention, a recapitulation with further explanatory remarks may be offered.

1. *To procure and encourage the transmission of seeds, &c*

The collecting of seeds and plants is one of the most important matters. No doubt there are, in various countries, numerous useful vegetable productions not yet introduced that are capable of reaching their highest state of development in some one or other of the various climates of this. It is worthy of consideration whether future efforts would not be rendered more directly useful by issuing letters of instruction to foreign representatives and correspondents, enumerating such seeds and plants in their respective localities as may, in the opinion of the department, be most worthy of experiment. With such advice, it is reasonable to hope that much of the disappointment consequent upon indiscriminate collection may be avoided, and only such products introduced as present, at least, plausible expectations of utility.

The efforts of the department would be greatly strengthened in this respect, and its area of usefulness vastly extended, if all who were possessed of new or rare seeds and plants would co-operate by transmitting samples for investigation. Many persons throughout the country occasionally receive plants and seeds from distant correspondents, and not having facilities for their proper cultivation they are consequently lost. It would be highly advantageous for the department to encourage the reception of such favors, have them carefully noted,

their merits properly investigated by competent cultivators, the result made known to the donors, and such disposition made of them as would be considered most advantageous.

2. *To procure by hybridizing and special culture, &c.*

The improvement of vegetable races by hybridizing and cross-breeding is at once the most direct and important means which we possess in modifying and adapting them to special purposes. The field of experiment here is boundless, and some sections of it have, so far, scarcely been trod upon. The improvement of various fruits, and their better adaptation to domestic purposes, present enticing inducements to the experimentalist. It may safely be assumed that none, even of our most valuable and oldest varieties of fruits, have attained that degree of excellence to which they may be brought, neither do they afford the variety nor continue their season of productiveness to the extent which is evidently possible. We have fruits that individually possess desirable properties, but associated with qualities that equally tend to depreciate their merits, and from the experience derived from former efforts, there is abundant evidence for encouragement in our efforts to produce a variety invested with a combination of excellencies not individually attained. Let us take, for example, that universally admired fruit, the strawberry, and originate a kind combining the wonderfully hardy and productive powers of the "Albany," the stately growth of the "Fillmore," and the exquisite delicacy of flavor found in the Vicomtesse Hericourt de Thury, and we might gratify ourselves with the possession of a plant approaching closely to perfection in this fruit. The grape, of all other fruits, offers great promise to the hybridizer. A good wine grape is yet a desideratum, and every attention should be directed to the production of a grape that will possess the necessary peculiar characteristics for this purpose.

There is scarcely a limit to the objects presented to the hybridizer for experiment. To increase the size and color of flowers, to improve the flavor of fruits by changing austerity and acidity into sugary matter, to increase the hardness of tender plants and make barren races productive, to extend the season of productiveness by hastening the maturity of some, and retarding that of others, are only a few of the many improvements awaiting the systematic efforts of the hybridizer.

It is true that in many cases the operation is somewhat difficult to perform, and in all a delicacy of manipulation is required, which tends to prevent experiments of the kind from becoming general, but carefully conducted operations will certainly be followed by valuable results.

3. *To ascertain, by experiment, the influence of culture, &c.*

To establish definite systems of culture; to ascertain how far certain desirable results can be influenced by pruning, how and when it is beneficial and when injurious; to institute carefully concerted experiments with a view of discovering to what extent the mere physical or mechanical condition of a soil affects its capacity of production, and how much is dependent upon its chemical constitution for the highest development of the cereals and fruits, opens up a line of inquiry by which valuable truths may be reached. The exact specific relation that exists between the soil and its vegetable productions, and the special appliances to render plant food soluble and in a condition available to the purposes of vegetation, are subjects upon which many opposite and seemingly conflicting opinions exist.

In this connexion, also, the application of manures, the kinds to be employed, and the time and manner of their use, whether as surface dressings, or by an intimate mixture with the soil, present a series of questions well known to be of vital importance, and of which much yet remains in obscurity.

4. *To investigate more thoroughly the various maladies and diseases of plants, &c.*

The diseases of plants are now attracting much attention. It is notorious that much of the difficulty now experienced in the production of fruits is, in a great degree, due to the prevalence of various maladies in trees. Thus we have to contend with the yellows of the peach and nectarine, as well as the so-called blister of their leaves in spring; the cracking and spotting of the fruit of the pear and apple, and the blighting of their branches, and the mildew and rot of the grape and gooseberry. How far these affections may be induced by deficiencies or repletions in the soil, or how much of their virulence is due to local position in connexion with atmospheric currents, has yet, in the majority of cases, to be determined.

Insects, also, beset the cultivator on every side; these are insidious and powerful opponents, requiring close study, minute and patient observation, in order to learn their habits, and adopt effectual means for their extermination. Experiments tending to the elucidation of these subjects are now in progress, and their further investigation will receive attention as soon as means will allow.

5. *To provide ample means for testing seeds, &c.*

The necessity for testing seeds and plants is one of the most obviously useful, as it has been one of the most assiduously and successfully conducted operations of the garden. Increased facilities for extending these tests has become necessary, especially with reference to agricultural seeds, roots, and tubers. Comparative results can only become definite and reliable when attained under similar circumstances. To ascertain whether one variety of plant is earlier, hardier, or more productive than another, it is necessary that they should be cultivated under the same conditions of climate and soil. When it is impracticable to procure other than small packages of new and choice articles, the purposes of distribution will be greatly enhanced by their previous increase. By this means a knowledge would be gained of their value which might prove of much moment. The necessary requirements for testing the products of hybridization further point to the paramount necessity of the department having at its disposal greater facilities than the present garden affords, and where the more extended and economical operations of field culture may be introduced.

6. *To cultivate specimens of various hedge plants, &c.*

The subject of live fences is one of vast import alike to the agriculturist, horticulturist, and pomologist. The heavy investments annually incurred in the erection and repairs of fencing has long been a matter of serious consideration, and the introduction and culture of hedges has in some quarters occupied much attention and been extensively adopted. Orchardists and gardeners are gradually awakening to the conviction that shelter is one of the most necessary appliances conducive to the health and earliness of their crops. The dry, frosty breezes of early spring are especially pernicious, and their effects lay the foundation for many plant diseases. On the western prairies, particularly, it may be questioned whether successful fruit culture will be realized in the absence of shelter from exhausting winds.

Then, again, for the purpose of forming neat boundary and dividing lines in pleasure grounds and gardens no fence is so beautiful, and, when proper plants are selected for it, no barrier so effective and permanent. As examples of what may be done, and how best to do it, specimen hedges should be established, showing the relative merits of various plants for the purpose, both deciduous and evergreen; this would afford demonstrative evidence far more satisfactory and conclusive than can be conveyed by any amount of mere descriptive advice.

7. *To cultivate a collection of the best fruit trees, &c.*

It is known that our lists of fruit trees have reached to an extent that renders it a matter of much perplexity to select those best suited for particular purposes. Tastes vary widely in this respect, and, happily, Nature has provided so ample a variety that all may be gratified. With a view to assist in the selection of sorts, specimen orchards should be established, consisting of a discriminate collection of the acknowledged best fruits, as far as they are known, in each class. In order to make this result more immediately effective, advantage should be taken of the valuable labors of the American Pomological Society in making a selection of sorts.

There is every reason to believe that plantations of this description will be of great service to all who contemplate planting fruit trees. The relative merits of sorts, both as regards the intrinsic qualities of the fruit, and the productiveness of the plant, as well as the general appearance and habit of growth, hardihood and freedom from disease, would here be exhibited. The modifying influences of culture in training and pruning, already alluded to, should here receive prominent attention. From such a source facts of the highest value would be demonstrated.

8. *To plant a collection of choice shrubs, &c.*

Every one will admit that the embellishment of dwellings and their surroundings has an ameliorating effect upon the habits of the occupants. It is also well known that many persons are deterred from undertaking this kind of improvement owing to their inability to decide upon the kind of plants and shrubs that would prove most satisfactory. A choice collection of hardy shrubs should therefore be cultivated, and if arranged so as to produce landscape effect, those who contemplated landscape improvements, and, indeed, all who felt desirous of studying the various forms and peculiarities of this family of plants, with a view of becoming familiar with their adaptabilities, either as isolated plants for particular positions, or the general effect produced by combined masses, would here find instructive examples.

9. *To erect glass structures, &c.*

The opinion is by far too prevalent that glass houses for the accommodation of plants or the culture of fruits are expensive luxuries within the reach of a comparative few. Nothing can be further from the truth; the pleasures as well as profits to be derived from an exotic graperies are so great, the expense of erection so moderate, and, withal, the general management so simple and so easily acquired, that it should form an adjunct to every country residence. Even in the limited area usually allotted to city dwellings a small graperies can be established where little else can be cultivated. It would be a duty worthy the attention of the department to show how to build such structures cheaply, and systematize and popularize a mode of management within the capacity of all to understand.

The trouble connected with raising hardy fruits, such as the plum, apricot, and nectarine, in some districts, has led to the culture of these fruits under the protection of glass houses, where a family supply is as certain as a crop of corn. The amount of fruit thus grown in a limited space is truly surprising. Successful examples of this and other projects cannot fail in conveying instruction and effecting an economy of time, labor, and money.

There is much yet to be demonstrated in the form, materials employed, ventilating, heating, and general arrangement of glass structures.

All of which is respectfully submitted.

WILLIAM SAUNDERS,
Superintendent of Experimental Garden.

